SEONGJUN JANG

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Education

2017 ~ 2021 **KyungHee University**
B.Eng. in Industrial & Management Systems Engineering
B.Eng. in Software Convergence (Convergence Leader Track)

- Scholarship : Full-tuition for full semesters (Admission Scholarship)
- GPA : 3.82 / 4.5

Study Abroad
: Intensive Engineering Program – **The University of Auckland** in New Zealand (2020)
: Short-Term Overseas Program – **UCSI University** in Malaysia (2017)

Research Interests

Specialized in **Optimization, Statistics, Data Science, Machine Learning**
Interested in **Music Information Retrieval**

Research Experience

Computer Vision Lab @ Korea University (MAR 2021 - JUN 2021)
Advisor : Prof. Sangpil Kim (Department of Artificial Intelligence, Korea Univ.)

Paper Experience

Data Augmentation Techniques for Effective Learning of Event-Based Data - 2020
- Link : (github.com/junnei/EST)
- Skills : Python, Pytorch
- Goal : Improving model performance with novel data augmentation techniques
- Details
  - Outperforms when applied to Yolo-v3(Image-like), Asynet(Event Histogram)

Demand Prediction and Location theory depending on the diffusion of Fuel-Cell Electric Vehicle and Hydrogen Station – 2019
- Link : (github.com/junnei/Paper_Hydro)
- Skills : Python, CPLEX, Tableau, React Native
- Goal : Predicting the diffusion of FCEV, finding the best locations for stations
- Details
  - Compare ours with government roadmaps
  - made navigation app for finding hydrogen station

Recently Project Experience

Future Signal Prediction of Dynamic Vision Sensor – 2021
- Skills : Python, Pytorch
- Goal : Prediction future signal of event-based camera(dynamic vision sensor)
- Details
  - Outperforms the SOTA model in Video Prediction : PhyDNet
  - Architecture - transformer-based model

Model Sparsity benefits with Data Sparsity – 2021
- Skills : Python, Pytorch
- Goal : Finding benefits of deep learning model sparsity when data is sparse.
- Details
  - Research transformer architecture

AI Song Contest – 2021
- Link : (https://www.aisongcontest.com/participants/rubatolab-2021)
- Skills : Python, Pytorch, Tensorflow
- Goal : Making Music with AI
- Details
  - Participate as a team (Rubato Lab @ MODULABS)
  - Compose a bass line with Music GPT2, and a drum with LSTM VAE

High Dynamic Range Object Detection Using Event-based Camera – 2020
- Link : (github.com/junnei/ECOD)
- Skills : Python, Pytorch
- Goal : Enables event-based data for object detection models
- Details
  - Convert sensor data to image to use object detection model : YOLOv3

Oulim : Web-based Remote Learning Platform – 2020
- Link : (oulim.pinkjelly.cat)
- Skills : JavaScript, React, Node.js
- Goal : Building a learning platform to help disabled people
- Details
  - Real-time voice recognition for subtitling system in class
  - Disability-friendly such as sign language translation and high contrast

Seemly : Psychological Test-based Matching Chat Service – 2020
- Link : (github.com/junnei/Seemly)
- Skills : Dart, Flutter, Firebase
- Goal : Enables event-based data for object detection models
- Details
  - Convert sensor data to image to use object detection model : YOLOv3

Harmony : Recruitment Platform for Disabled People – 2020
- Link : (github.com/junnei/harmony)
- Skills : Dart, Flutter, Firebase

Dyslexia Diagnostic App Service – 2020
- Skills : Python, Pytorch, JavaScript, React Native, NCloud API

Benefit-based Integrated Automatic Payment Service – 2019
- Link : (github.com/junnei/sol_app)
- Skills : JavaScript, React Native, Sihnhan API
- Goal : Enables automatic payment with the most beneficial card
- Details
  - Get a **excellence prize** with Payment App in **Shinhan-Hackathon 2019**

Speech Recognition Model based Seq2seq – 2019
- Skills : Python, Pytorch, NSML
- Temporarily first place in Naver AI Hackathon

SNS Service to Share Travel Records – 2019
- Skills : React Native, JavaScript

Web Service for Abandoned Dog Support – 2019
- Link : (mong.kr)
- Skills : AWS, Django, PostgreSQL

Black-and-white Picture Coloring Model based U-Net – 2018
- Skills : Python, Tensorflow, Colab

Pre-order Service for Take-out – 2018
- Skills : React Native, mongoDB
- Goal : Enables self-employed people to provide pre-order service for take-out
- Details
  - **First prize** in **KyungHee Startup Contest**
  - **Innovation award** in **Yongin Startup Contest**
  - Start-up company receives **70 million won in support**

Flight Ticket Reservation Service – 2018
- Skills : HTML, PHP, JavaScript, mysql

Folder and File Management System – 2018
- Skills : C++

Music Management and Playback Service – 2018
- Skills : C++

Auto-watered Flower Pot with Light for Growth – 2018
- Skills : Maya, Arduino, Embedded C
- Details
  - **First prize** by track in **Kyung-Hee Valley Program**